

ZHAO ET AL.
"Satellite Positioning Systems Receivers ..."
Atty. Docket No. CS20045RL

Appl. No. 09/993,108
Examiner F. Mull
Art Unit 3662

REMARKS

Request for Reconsideration, Informal Matters, Claims Pending

5 The final Office Action mailed on 23 October 2003 has been considered carefully. Reconsideration of the claimed invention in view of the amendments above and the discussion below is respectfully requested.

10 The proposed drawing change to FIG. 4 will be updated to indicate, in block 420, - - Estimated Location - - instead of "altitude" as noted by the Examiner.

 Claims 1-5, 15-19 and 23 stand allowed. Claims 7-9, 13-14 and 20-22 were indicated as being allowable, but stand objected to on various grounds addressed further below.

15 Claims 1-11 and 13-23 are pending.

Response to Rejection Under 35 USC 112, 1st para.

 Claims 9, 11 and 20-22 stand rejected under 35 UCS 112, first para.

20 Discussion of Claim 9

 Claim 9 has been amended to depend from Claim 6 directly, rather than from Claim 7, which limits how the "reference altitude" is computed. The amendment to Claim 9 raises no new issues because amended
25 Claim 9 is no broader than Claim 6, from which it depends, and moreover amended Claim 9 maintains the conditional limitation on the computation of the "... new location of the receiver ..." in Claim 6, as discussed further below.

ZHAO ET AL.
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Atty. Docket No. CS20045RL

Appl. No. 09/993,108
Examiner F. Mull
Art Unit 3662

The amendment to claim 9 should be entered because Claims 6 & 9 remain in condition for allowance. Kindly enter the amendment.

Claim 9 imposes a condition on the "... determining a new location of the receiver ..." limitation in base Claim 6. Particularly, Claim 9 recites that the new location of the receiver is determined "... if a difference between the derived altitude and the reference altitude of the receiver is outside an altitude threshold" condition is satisfied. The "reference altitude" is defined in Claim 6. The "derived altitude" limitation is defined in Claim 9; it's determined from a three-dimensional estimated location of the receiver. Claim 9 is not indefinite.

Original Claim 9 provides support for the substantively unchanged conditional limitation of amended Claim 9. As noted, the dependency of Claim 9 has been changed. Claim 9 was dependent originally from Claim 8, which imposed only a limitation on how the "estimated location of the receiver" of Claim 9 was obtained, unrelated to the condition limitation.

Claim 9 covers a general case where the "3-dimensional location" could be different than the "estimated location" of Claim 6. The exemplary process of FIG. 4 illustrates the special case where the "estimated location" is a "3-dimensional location". Thus the narrow interpretation of Claim 9 (corresponding to FIG. 4) is the case where the "3-dimensional location" of Claim 9 is the "estimated location". According to the narrow interpretation, the "derived altitude" is obtained from the 3-dimensional location (altitude is part of the 3-D position solution), and the reference altitude is obtained based upon the 3-dimensional location, for example, by reference to a map database as recited in Claim 7. A broader interpretation of Claim 9 (not necessarily corresponding to FIG. 4) is the case where the 3-dimensional location of Claim 9 is different than the estimated location. In this broader interpretation, for

ZHAO ET AL.
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Appl. No. 09/993,108
Examiner F. Mull
Art Unit 3662

example, the 3-dimensional location could be computed using the estimated location as a starting point. Iterative position solutions are discussed throughout the Detailed Description. Nevertheless, as discussed above, at least one interpretation of Claim 9 is supported by the detailed description and drawings filed originally. Moreover, the scope of "3-dimensional location" limitation of Claim 9 was also established on the application filing date, so there is no new matter issue. The Examiner's suggestion that 3-dimensional estimated location is not disclosed in the specification is incorrect. See, for example, page 5, lines 6-7, of the instant specification. Kindly withdraw the objection to Claim 9.

Discussion of Claim 11

Claim 11 merely recites that the "reference altitude" of the receiver is "... based upon the estimated location of the receiver and based upon 3-dimensional location fix altitude information." Support for the limitations of Claim 11 are provided on page, 3, lines 22 - page 4, line 10, and also in original Claim 11, and on page 5, lines 8-10. Kindly withdraw the objection to Claim 11.

Discussion of Claims 20-22

Support for the "... the estimated location is a 3-dimensional location ..." limitation of Claim 20 may be found in the Specification on page 2, lines 17-22 & page 5, lines 6-7, including in original Claim 20. Note that the discussion on page 2, lines 17-22, irrefutably implies a 2 and 3 dimensional location information. Those of ordinary skill art commonly use satellite

ZHAO ET AL.
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Atty. Docket No. CS20045RL

Appl. No. 09/993,108
Examiner F. Mull
Art Unit 3662

and/or terrestrial "pseudo-range information" to compute 2 and 3 dimensional position information. Kindly withdraw the objection to Claim 20. Claim 21 depends from Claim 20, but does not recite the 3-dimensional location limitation. Original Claim 22 is also fully supported by the detailed description. Kindly withdraw the objection to Claim 20-22.

Allowability of Claims Over Fernandez-Corbaton

Claims 6 and 10-11 stand rejected under 35 U.S.C. 102(e) for anticipation by US 6,289,280 (Fernandez-Corbaton).

Regarding Claim 6, in the 'Response to Arguments' of the Office Action of 23 October 2003, para. 10, the Examiner contends that

... Fernandez-Corbaton determines an estimated location, which he calls the "initial estimate" (col. 6, lines 55-56 and 63-66), which leads to a reference altitude (col. 6, lines 54-56; col. 7, lines 18-23 and 35-38), which then leads to a new location, which he calls the "approximate solution" (col. 7, lines 45-47).

Discussion of Patentability of Independent Claim 6

Regarding Claim 6, contrary to the Examiner's assertion, Fernandez-Corbaton does not disclose or suggest a "... method in a satellite positioning system receiver..." including

determining an estimated location of the receiver based on information received from a wireless communications network;
determining a reference altitude of the receiver based upon the estimated location of the receiver;
determining a new location of the receiver based upon the reference altitude.

ZHAO ET AL.
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Atty. Docket No. CS20045RL

Appl. No. 09/993,108
Examiner F. Mull
Art Unit 3662

5 The Examiner's suggestion that Fernandez-Corbaton determines a
"... reference altitude..." is incorrect. Moreover the Examiner's reference to
Fernandez-Corbaton at col. 6, lines 54-56; col. 7, lines 18-23 and 35-38 does not
support this assertion. At col. 6, lines 54-56, Fernandez-Corbaton merely
discloses "... linearizing satellite and altitude aiding measurements around an
initial estimate of the user position." The linearizing of satellite and altitude
aiding measurements of Fernandez-Corbaton is not the same as "...
determining a reference altitude of the receiver based upon the estimated
location of the receiver..." as recited in Claim 6. The Examiner's discussion of
10 pre- and post- linearized altitude is nonsense. Fernandez-Corbaton teaches
linearizing satellite measurements and altitude aiding measurements, not
altitude, about an estimated location.

15 At col. 6, line 63-66, Fernandez-Corbaton merely indicates how or
from where the initial position may be obtained, i.e., "... [a]lternatively, the
initial location could be determined by any means for estimating the location
in question, such as previous location fixes, information attained through other
position location techniques, etc." Fernandez-Corbaton, col. 6, line 63-66. The
foregoing passage of Fernandez-Corbaton refers to where one may obtain the
estimated position about which linearization is performed, discussed in col. 6,
20 lines 54-56, of Fernandez-Corbaton. The Examiner's suggestion that
Fernandez-Corbaton determines a "... new location of the receiver based upon
the reference altitude ..." is also incorrect. As noted above, Fernandez-
Corbaton does not determine a reference altitude. Claim 6 and the claims that
depend therefrom are thus patentably distinguished over Fernandez-
25 Corbaton.

ZHAO ET AL.
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Atty. Docket No. CS20045RL

Appl. No. 09/993,108
Examiner F. Mull
Art Unit 3662

Discussion of Patentability of Claim 10

Regarding Claim 10, dependent from Claim 6, Fernandez-Corbaton does not disclose or suggest a "... method in a satellite positioning system receiver..." including

... determining the new location at the receiver based upon the reference altitude of the receiver and terrain slope information for the estimated location."

As noted above, Fernandez-Corbaton does not determine a reference altitude. Therefore Fernandez-Corbaton cannot meet the limitations of Claim 10. Fernandez-Corbaton merely uses terrain information to estimate an altitude equation. Fernandez-Corbaton, col. 8, lines 52-61. In Fernandez-Corbaton, the altitude information is linearized using the estimated location as discussed above. Fernandez-Corbaton, col. 6, lines 54-58. Thus, Fernandez-Corbaton does not determine the "...new location at the receiver based upon the reference altitude of the receiver and terrain slope information for the estimated location." Claim 10 is thus further patentably distinguished over Fernandez-Corbaton.

Discussion of Patentability of Claim 11

Regarding Claim 11, dependent from Claim 6, Fernandez-Corbaton does not disclose or suggest a "... method in a satellite positioning system receiver..." including

ZHAO ET AL.
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Art Unit 3662

... determining the reference altitude of the receiver based upon the estimated location of the receiver and based upon 3-dimensional location fix altitude information.

5 As noted, the Examiner's suggestion that Fernandez-Corbaton determines a "... reference altitude..." is incorrect. Moreover the Examiner's reference to Fernandez-Corbaton at col. 6, lines 54-56; col. 7, lines 18-23 and 35-38 does not support this assertion. At col. 6, lines 54-56, Fernandez-Corbaton merely discloses "... linearizing satellite and altitude aiding measurements
10 around an initial estimate of the user position." The linearizing of satellite and altitude aiding measurements of Fernandez-Corbaton is not the same as "... determining a reference altitude of the receiver based upon the estimated location of the receiver..." as recited in Claim 6. The Examiner's discussion of pre- and post- linearized altitude is nonsense. Fernandez-Corbaton teaches
15 linearizing satellite measurements and altitude aiding measurements, not altitude, about an estimated location.

At col. 6, line 63-66, Fernandez-Corbaton merely indicates how or from where the initial position may be obtained, i.e., "... [a]lternatively, the initial location could be determined by any means for estimating the location
20 in question, such as previous location fixes, information attained through other position location techniques, etc." Fernandez-Corbaton, col. 6, line 63-66. The foregoing passage of Fernandez-Corbaton refers to where one may obtain the estimated position about which linearization is performed, discussed in col. 6, lines 54-56, of Fernandez-Corbaton. The Examiner's suggestion that
25 Fernandez-Corbaton determines a "... new location of the receiver based upon the reference altitude ..." is also incorrect. As noted above, Fernandez-Corbaton does not determine a reference altitude. Claim 11 and the claims that

ZHAO ET AL.
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Appl. No. 09/993,108
Examiner F. Mull
Art Unit 3662

depend therefrom are thus patentably distinguished over Fernandez-Corbaton.

Prayer For Relief

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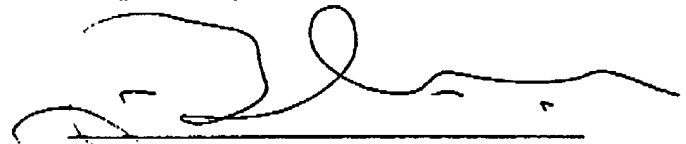
In view of any amendments and the discussion above, the Claims of the present application are in condition for allowance. Kindly withdraw any rejections and objections and allow this application to issue as a United States Patent without further delay.

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The Examiner is invited to contact the undersigned upon carefully reviewing the foregoing amendment and discussion, prior to preparing an official action in response thereto.

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Respectfully submitted,



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